

Work Order ID 157491***157491***

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Monday, March 13, 2017 1:54:49 PM

Item ID: D117-762-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube with Standard Wearplates Fits LH or RH
Start Date: 3/8/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 3/20/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference: SCHEDULED

Approvals: Process Plan: **DAS 21 9-89** Date: **MAR 13 2017** Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI9771	A	DAS 6 9-89	MAR 13 2017					DAS 21 9-89	17-03-13
IIN-D117-762	E								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.25				DAS 28 9-89		MAR 21 2017	
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP D117-762-011		CHG004						

110	Pick Kit	0.00							
110									
Packaging	Memo	0.00						DAS 27 9-89	MAR 13 2017
Packaging									

B15678 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC4- 100% Inspect kits for completeness	0.00							
120						DAS 28 9-89			
QC	Memo	0.01						MAR 2 1 2017	
Quality Control									
130		0.00							
130	Packaging					DAS 27 9-89	DAS 28 9-89		
Packaging	Memo	0.00						MAR 2 1 2017	
Packaging	Identify and pack for shipping as per PPP D117-762-011 Location :FG081								
140	QC21- Final Inspection - Work Order Release	0.00							
140							DAS 21 9-89		
QC	Memo	0.02						MAR 2 2 2017	
Quality Control									
							DAS 21 9-89		

MAR 2 2 2017

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WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
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Picklist Print

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Page 1

Work Order ID: 157491

157491

Parent Item: D117-762-011

D117-762-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 3/8/2017

Required Date: 3/20/2017

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A07.06.11New Issue EC
 IPP Rev:B 08-02-22 change to revA DD verified by:ec
 IPP Rev C 08.12.19 incorporated DSI9435 EC verified by:DD
 IPP REV:D 13.11.14 IIN REV.C DD VERF:JLM IPP
 REV:E 15.06.11 IIN REV.D DD VERF:JLM IPP REV:F
 17.01.17 PER CHG004 (dsi9771) DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN6C52A *AN6C52A* BOLT		Purchased	No			110	Each	15.0000	2	2		DAS 27 6 9-89	MAR 13 2017
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST333			15						
				m134535			15						
D5300-1 *D5300-1* GHL Bushing		Manufactured	No			110	Each	8.0000	2	2		DAS 27 6 9-89	MAR 13 2017
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST162			8						
				156514			8						
D5301-1 *D5301-1* GHL Plug		Manufactured	No			110	Each	6.0000	2	2		DAS 27 6 9-89	MAR 13 2017
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST162			6						
				156516			6						
D117-762-041 *D117-762-041* Replacement Skidtube		Manufactured	No			110	Each	0.0000	1	1		DAS 27 6 9-89	MAR 13 2017
				<u>Location</u>			<u>Loc Qty</u>	<u>Loc Code</u>					
				ST162			6						
				156516			6						

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Picklist Print

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Parent Item: D117-762-011

D117-762-011

Parent Item Name: Skidtube with Standard Wearplates Fits LH or RH

Start Date: 3/8/2017

Required Date: 3/20/2017

Start Qty: 1.00

Required Qty: 1.00

D3512-041 Manufactured No

110 Each

14.0000

2 2

D3512-041

Wearplate

**

DAS
6
9-89

MAR 13 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

ST610

14

153703

6

155744

4

155925

4

MS21043-6 Purchased No

110 Each

48.0000

2 2

MS21043-6

NUT

**

DAS
6
9-89

MAR 13 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

20

103693

20

FP001

11

m135470

2

m136295

9

ST302

17

m136648

17

DAS
28
9-89

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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-762 REV. E AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-762 REV. 4

REF FAA STC: SR01853SE

REF: TC LETTER OF ACCEPTANCE RDIMS-4374899

REF EASA STC: EASA.10017063

1.0 PURPOSE

The purpose of this Dart Service Instruction (DSI) is to replace the ground handling lugs (D3864-1 Bushings, AN6C51A Bolts and MS21043-6 Nuts) on the D117-762-XXX Skidtubes with a structurally superior lug design (D5300-1 Bushings, D5301-1 Plugs, AN6C52A Bolts, MS21043-6 Nuts) as shown in Figure 1. The new hardware will be included in D117-762-011 @ CHG 004 and subsequent.

2.0 INSTALLATION

For D117-762-011 @ CHG 004 and subsequent, the ground handling hardware should be installed as follows:

- 2.1 Loosely install (qty 2) D5300-1 GH L Bushing & (qty 2) D5301-1 GH L Plug wet with Proseal 890 or MIL-S-8802 Class B2 Sealant in location shown in Figure 1.
- 2.2 Install (qty 2) AN6C52A Bolts and (qty 2) MS21043-6 Nuts in accordance with Figure 1. Clean up squeezed out Proseal and apply fillet seal around D5300-1 & D5301-1.
- 2.3 Torque AN6C52A Bolts 160 - 190 in-lbs (18.1 - 21.5 N-m).

3.0 PARTS LIST

For D117-762-011 @ CHG 004 and subsequent, the Part List in IIN-D117-762 and ICA-D117-762 is modified as follows:

IS

ITEM	QTY -011	PART NUMBER	DESCRIPTION
	X	D117-762-011	SKIDTUBE INSTALLATION
50	2	AN6C52A	BOLT
51A	2	D5300-1	GH L BUSHING
51B	2	D5301-1	GH L PLUG
52	2	MS21043-6	NUT

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 157491
17-03-17

A	NEW ISSUE	RF	17.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHL UPGRADE KIT	NTS
DATE	17.01.09	COPYRIGHT ©2017 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, LTD.	

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Substation ☐	Process Improvement ☐																																																																								
Past Expiry Date ☐	Manufacturing Process ☐																																																																								
Misidentified ☐	Past Due ☐																																																																								
Pressure/Forced ☐																																																																									
Bending ☐																																																																									
Centre Not Concentric ☐																																																																									
Cracks ☐																																																																									
Crimp/Kink/Ripple/Wave ☐																																																																									
Cuffs ☐																																																																									
Crushing ☐																																																																									
Heat Treat ☐																																																																									
Wave/Twist in Tube ☐																																																																									
Marks/Chatter ☐																																																																									
Temperature/Cure ☐																																																																									
Set-up ☐																																																																									
BOM/Route ☐																																																																									
Broken/Damage/Defect ☐																																																																									
Inspection Incomplete/Unqualified ☐																																																																									
Contamination ☐																																																																									
Countersink ☐																																																																									
Cut Too Short ☐																																																																									
Instructions Incomplete/Unclear ☐																																																																									
Drill Holes ☐																																																																									
Power Loss/Surge ☐																																																																									
Folio/Program ☐																																																																									
Grain ☐																																																																									
Weld ☐																																																																									
Wrong Stock Pulled ☐																																																																									
Out of Sequence ☐																																																																									
Off-set ☐																																																																									
Mislabeled ☐																																																																									
Fit/Function ☐																																																																									
Misaligned/off center ☐																																																																									
Positioned Wrong ☐																																																																									
Outside Dimensions ☐																																																																									
Over/Under tolerance ☐																																																																									
Part Incorrect ☐																																																																									
Part Lost/Missing ☐																																																																									
Part Moved ☐																																																																									
Drawing ☐																																																																									
Finish ☐																																																																									
Misread ☐																																																																									
Turning Sequence ☐																																																																									
		OTHER :																																																																							

WAS

ITEM	QTY -011	PART NUMBER	DESCRIPTION
	X	D117-762-011	SKIDTUBE INSTALLATION
50	2	AN6C51A	BOLT
51	4	D3864-1	BUSHING
52	2	MS21043-6	NUT

4.0 WEIGHT AND BALANCE

There is negligible weight and balance change associated with this modification.

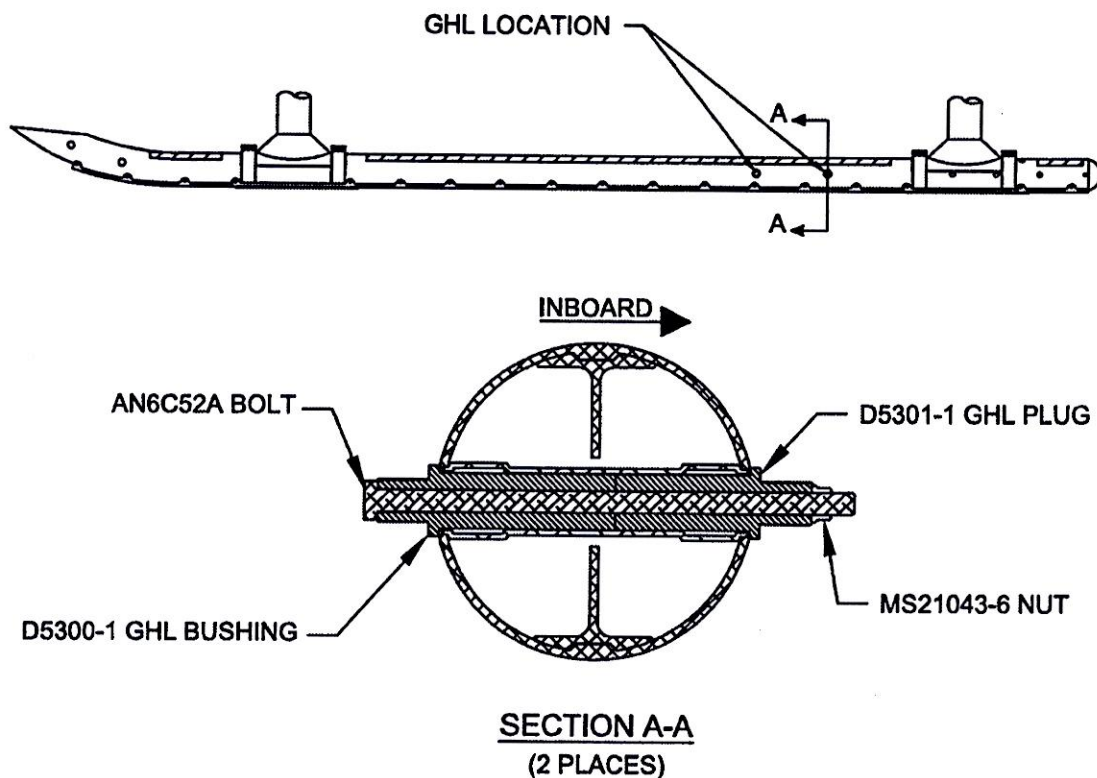


FIGURE 1 - GHL UPGRADE INSTALLATION

DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHU UPGRADE KIT	NTS
DATE	17.01.09	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

Item	Qty -011	Qty -041	Part Number	Description
	X		D117-762-011	SKIDTUBE INSTALLATION
	1	X	D117-762-041	REPLACEMENT SKIDTUBE
1		1	D3582-041	SKIDTUBE ASSEMBLY
2	2		**1121-51002	SKID SHOE
3	2		**1121-51102	CLAMPING RING
4	8		**LN9380M8X45	HEXAGON BOLT
5	8		**LN9023A8-1.4544.9	LOCKING WASHER
6	8		**LN9025-0815K	WASHER (OR LN9025-0815L)
10		1	*D2965	CAP
11		2	***AELS-1032-225	INSERT
12		2	*AN3C5A	BOLT
13		2	*NAS1149C0332R	WASHER (OR AN960C10L)
20A		1	*D3508-9	WEARPLATE
20B		1	*D3558-9	GASKET
21A		1	*D3508-3	WEARPLATE
21B		1	*D3558-3	GASKET
22A		1	*D3508-11	WEARPLATE
22B		1	*D3558-11	GASKET
23A		1	*D3508-13	WEARPLATE
23B		1	*D3558-13	GASKET
24		36	*AELS-1032-130	INSERT
25	8	28	*AN3C4A	BOLT
26	8	28	*NAS1149C0332R	WASHER (OR AN960C10L)
27	2		D3512-041	WEARPLATE
30		2	*AELS-1032-130	INSERT
31		2	*AN3C4A	BOLT
32		2	*NAS1149C0332R	WASHER (OR AN960C10L)
50	2		AN6C51A	BOLT
51	4		D3864-1	BUSHING
52	2		MS21043-6	NUT

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

REFERENCE ONLY

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D117-762 REV. E AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D117-762 REV. 4

REF FAA STC: SR01853SE

REF: TC LETTER OF ACCEPTANCE RDIMS-4374899

REF EASA STC: EASA.10017063

1.0 PURPOSE

The purpose of this Dart Service Instruction (DSI) is to replace the ground handling lugs (D3864-1 Bushings, AN6C51A Bolts and MS21043-6 Nuts) on the D117-762-XXX Skidtubes with a structurally superior lug design (D5300-1 Bushings, D5301-1 Plugs, AN6C52A Bolts, MS21043-6 Nuts) as shown in Figure 1. The new hardware will be included in D117-762-011 @ CHG 004 and subsequent.

2.0 INSTALLATION

For D117-762-011 @ CHG 004 and subsequent, the ground handling hardware should be installed as follows:

- 2.1 Loosely install (qty 2) D5300-1 GHL Bushing & (qty 2) D5301-1 GHL Plug wet with Proseal 890 or MIL-S-8802 Class B2 Sealant in location shown in Figure 1.
- 2.2 Install (qty 2) AN6C52A Bolts and (qty 2) MS21043-6 Nuts in accordance with Figure 1. Clean up squeezed out Proseal and apply fillet seal around D5300-1 & D5301-1.
- 2.3 Torque AN6C52A Bolts 160 - 190 in-lbs (18.1 - 21.5 N-m).

3.0 PARTS LIST

For D117-762-011 @ CHG 004 and subsequent, the Part List in IIN-D117-762 and ICA-D117-762 is modified as follows:

IS

ITEM	QTY -011	PART NUMBER	DESCRIPTION
	X	D117-762-011	SKIDTUBE INSTALLATION
50	2	AN6C52A	BOLT
51A	2	D5300-1	GHL BUSHING
51B	2	D5301-1	GHL PLUG
52	2	MS21043-6	NUT

A	NEW ISSUE	RF	17.01.09
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE, LTD EUGENE, OR	
DRAWN	RF		
CHECKED	WK	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9771	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.		GHL UPGRADE KIT	NTS
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